
U.S. Department of the Interior • U.S. Geological Survey

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TITANIUM IN THE THIRD QUARTER 1997

Ores and Concentrates

In China, Pangang Group Titanium Works Co. announced plans to increase its production of titanium concentrates from 100,000 metric tons per year to 180,000 tons per year by the year 2000. The company also plans to increase its TiO₂ pigment capacity from 4,000 tons per year to 10,000 tons per year and is conducting research in titanium slag production (Platt's Metals Week, 1997).

Metal

According to the U.S. Geological Survey, titanium mill product shipments were 7,050 tons, a 7% increase compared with those of the previous quarter. Receipts of titanium scrap totaled 8,940 tons with 3,620 tons of home scrap and 5,330 tons of purchased scrap. Scrap receipts decreased 2% compared with those of the previous quarter. Ingot shipments were 5,860 tons, a 5% decrease compared with those of the previous quarter.

Allegheny Teledyne Inc. announced plans to expand its business in specialty metals through the acquisition of Oregon Metallurgical Corp. (Oremet). Currently, Teledyne's subsidiaries in the titanium industry include Wah Chang, Albany, OR, and Allvac, Monroe, NC. The acquisition was not expected to affect Oremet's construction of a new electron-beam melting furnace scheduled for completion in mid-1998 (Invest

Quest, Inc., 1997).

Allvac commissioned a new furnace at its Monroe, NC, facility for producing titanium ingot. The new furnace is based on plasma-arc cold hearth melting technology and is expected to produce up to 2,270 tons per year. With the addition of the new furnace, Allvac's total melt capacity is estimated to be 10,000 to 12,000 tons per year (Metal Bulletin, 1997).

According to the Japan Titanium Society, Japan's production and shipments of titanium sponge in the third quarter were 6,070 and 6,200 tons, respectively. Mill product shipments were 3,450 tons. Exports of titanium sponge and mill products were 3,630 and 1,890 tons, respectively.

Notice

Excluding prices, the data in this publication have been rounded to three significant figures.

References Cited

Platt's Metals Week, 1997, China's Panzhihua forms new Ti firm: Platt's Metals Week, v. 68, no. 18, May 17, p. 9.

Metal Bulletin 1997, Allvac increases output: Metal Bulletin, no. 8214, September 25, p. 9.

Invest Quest, Inc., 1997, Allegheny Teledyne agrees to acquire Oremet in \$560 million merger: October 31 (Accessed on the World Wide Web at URL <http://www.investquest.com/InvestQuest/a/alt/ne/news/altore.htm>)

TABLE 1
COMPONENTS OF U.S. TITANIUM METAL SUPPLY AND DEMAND 1/

(Metric tons)

	1996			1997			
	Third quarter	Fourth quarter	Year to date	First quarter	Second quarter	Third quarter 2/	Year to date
Production:							
Sponge	W	W	W	W	W	W	W
Ingot	13,000	13,100	51,400	13,800	14,500	15,200	43,500
Mill products	8,000	7,860	30,700	8,330	8,040	8,750	25,100
Exports:							
Sponge	136	243	528	198	218	422	838
Scrap	1,080	1,190	3,410	1,010	1,290	717	3,020
Ingot, slab, sheet bar, etc.	918	1,180	3,120	1,140	979	482	2,600
Other unwrought	110	133	471	88	52	72	211
Bars, rods, profiles, and wire	294	255	1,400	301	346	245	892
Other wrought	716	674	3,130	893	989	637	2,520
Total	3,250	3,670	12,100	3,630	3,880	2,580	10,100
Imports:							
Sponge	2,460	3,160	10,100	3,830	4,060	2,280	10,200
Waste and scrap	4,180	3,840	16,400	3,320 r/	2,810	1,790	7,920
Ingot, billet	752	1,090	2,590	1,130	1,520	1,010	3,650
Other unwrought	204	152	595	116	73	50	239
Articles of titanium	57	38	261	65	37	69	171
Other wrought (mill products)	1,800	1,760	5,890	1,420	1,060	729	3,210
Total	9,450	10,000	35,800	9,870 r/	9,570	5,930	25,400
Stocks, end of period:							
Sponge, Government 3/	33,400	33,200	XX	33,200	33,200	33,200	XX
Sponge, industry	4,000	4,390	XX	5,250	5,670	5,460	XX
Scrap	15,400	15,900	XX	16,400	15,300	15,300	XX
Ingot	3,970	4,710	XX	4,310	4,330	4,910	XX
Total industry	23,300	25,000	XX	25,900	25,300	25,600	XX
Consumption:							
Sponge	8,570	6,850	28,400	6,890	8,300	8,650	23,800
Scrap	6,740	7,320	26,300	6,620	6,770	6,450	19,800
Ingot	9,420	9,920	38,300	10,500	11,400	11,800	33,700
Mill products (net shipments):	6,960	6,840	25,900	6,780	6,570	7,050	20,400
Forging and extrusion billet	3,380	3,200	11,200	3,040	3,000	3,060	9,090
Rod and bar	670	793	3,100	736	795	832	2,360
Other 4/	2,910	2,850	11,600	3,000	2,770	3,160	8,930
Castings (shipments)	139	144	680	138	197	210	545

r/ Revised. W Withheld to avoid disclosing company proprietary data. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Imports and exports for third quarter 1997 include July and August only. September 1997 data not available at time of publication. Production and consumption data are for full quarter.

3/ Includes 23,300 tons stockpile grade and 9,860 tons nonstockpile grade material.

4/ Data for sheet and strip, plate, fastener stock and wire, extrusions (other than tubing), pipe and tubing, and other have been combined to avoid disclosing company proprietary data.

TABLE 2
COMPONENTS OF U.S. TITANIUM DIOXIDE PIGMENT SUPPLY AND DEMAND 1/

(Metric tons)

	1996			1997			
	Third quarter	Fourth quarter	Year to date	First quarter	Second quarter	Third quarter	Year to date
Production	304,000	320,000	1,230,000	316,000	342,000	340,000	997,000
Imports 2/	42,000	30,700 r/	155,000 r/	49,500 r/	48,400	NA	NA
Exports 3/	83,000	97,400	332,000	103,000	104,000	NA	NA
Stocks, end of period	98,300	107,000	XX	97,300	94,000	99,800	XX
Apparent consumption 4/	281,000	245,000 r/	1,060,000 r/	272,000 r/	289,000	NA	NA

r/ Revised. NA Not available. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Based on Harmonized Tariff Schedule of the United States (2823.00.0000, 3206.10.0050, and 3206.10.0010).

3/ Based on Harmonized Tariff Schedule of the United States (2823.00.0000 and 3206.10.0000).

4/ Apparent consumption = production + imports - exports - stock increase or + stock decrease.

Source: Bureau of the Census.

TABLE 3
U.S. EXPORTS OF TITANIUM PRODUCTS 1/

(Metric tons)

	1996			1997			
	Third quarter	Fourth quarter	Year to date	First quarter	Second quarter	July-August	Year to date
Metal:							
Unwrought:							
Sponge	136	243	528	198	218	422	838
Scrap	1,080	1,190	3,410	1,010	1,290	717	3,020
Billet	85	186	489	135	219	191	544
Blooms and sheet bars	802	911	3,060	877	609	196	1,680
Ingot	31	78	269	132	151	95	378
Other unwrought	110	133	471	88	52	72	211
Wrought:							
Bars, rods, profiles, and wire	294	255	1,400	301	346	245	892
Other	716	674	3,130	893	989	637	2,520
Ores and concentrates	6,050	722	15,500	7,510	1,810	6,650	16,000
Oxides	11,300	13,200	40,600	9,550	9,760	7,700	27,000
Pigments	71,600	84,200	292,000	93,700	94,500	56,900	245,000

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF TITANIUM METAL 1/

(Metric tons)

	1996			1997			
	Third quarter	Fourth quarter	Year to date	First quarter	Second quarter	July- August	Year to date
Unwrought:							
Sponge:							
China	274	304	833	214	154	45	413
Japan	1,200	1,470	4,400	1,770	1,630	944	4,350
Kazakstan	330	485	920	465	135	344	944
Russia	583	896	3,570	1,230	1,780	947	3,950
Other	71	4	379	147	366	--	513
Total	2,460	3,160	10,100	3,830	4,060	2,280	10,200
Waste and scrap:							
Canada	106	111	409	63 r/	42	26	131
France	181	187	848	305 r/	244	262	811
Germany	204	33	559	52 r/	198	91	341
Italy	330	407	1,380	278 r/	413	223	914
Japan	717	720	2,620	478 r/	568	359	1,410
Russia	1,160	987	5,490	890 r/	531	234	1,660
United Kingdom	1,140	1,110	3,770	888 r/	601	460	1,950
Other	345	285	1,300	362 r/	216	135	713
Total	4,180	3,840	16,400	3,320 r/	2,810	1,790	7,920
Ingot and billet:							
France	--	--	30	--	--	--	--
Japan	19	3	67	(2/) r/	1	1	2
Kazakstan	--	--	91	--	--	--	--
Russia	402	725	1,550	768	1,060	646	2,470
United Kingdom	218	270	635	202	306	263	770
Other	113	90	221	158 r/	155	98	411
Total	752	1,090	2,590	1,130	1,520	1,010	3,650
Powder	88	77	240	60	51	34	144
Other 3/	116	75	355	56	22	16	93
Wrought:							
Articles of titanium:							
Castings	1	1	4	1	1	1	3
Other	56	37	257	64	36	68	168
Other wrought (mill products):							
Bars, rods, profiles, and wire	427	682	1,710	666	318	105	1,090
Plates, sheets, strips, and foil	1,050	915	3,490	447	309	458	1,210
Tubes and pipes	82	51	311	7	14	53	74
Other	241	114	374	297	423	113	833
Total mill products	1,800	1,760	5,890	1,420	1,060	729	3,210

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Less than 1/2 unit.

3/ Includes blooms, sheet bars, slabs, and other.

Source: Bureau of the Census.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF TITANIUM CONCENTRATES 1/

(Metric tons)

	1996			1997			
	Third quarter	Fourth quarter	Year to date	First quarter	Second quarter	July-August	Year to date
Ilmenite:							
Australia	68,900	143,000	359,000	105,000	79,500	85,000	269,000
India	--	--	114,000	26,200	30,000	--	56,300
Sri Lanka	29,400	--	29,400	--	--	--	--
Ukraine	--	--	15,800	--	--	27,100	27,100
Total	98,400	143,000	518,000	131,000	110,000	112,000	353,000
Titanium slag:							
Canada	--	--	11,500	30,400	--	--	30,400
South Africa	115,000	145,000	410,000	45,700	72,000	97,900	216,000
Other	--	--	2	--	--	11	11
Total	115,000	145,000	421,000	76,100	72,000	97,900	246,000
Rutile:							
Australia	5,410	14,700	46,000	4,580	7,480	22,700	34,700
South Africa	41,100	23,400	135,000	31,900	32,700	20,100	84,700
Other	337	3	1,180	--	24	28	52
Total	46,800	38,200	182,000	36,500	40,200	42,800	119,000
Synthetic rutile:							
Australia	41,000	13,300	108,000	31,400	35,000	43,000	109,000
Malaysia	3,810	--	6,850	456	2,660	1,140	4,260
Other	27,200	--	27,200	--	--	167	167
Total	71,900	13,300	142,000	31,800	37,700	44,400	114,000
Titaniferous iron ore:							
Canada	15,000	38,800	90,200	69	12,300	12,100	24,500

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF TITANIUM PIGMENTS 1/

(Metric tons)

	1996			1997			
	Third quarter	Fourth quarter	Year to date	First quarter	Second quarter	July-August	Year to date
80% or more titanium dioxide:							
Canada	17,600	17,600	64,900	18,800	18,500	13,300	50,700
China	120	131	771	154	624	413	1,190
Finland	223	155	966	156	128	86	370
France	711	650	2,830	744	711	601	2,060
Germany	4,490	3,060	14,500	6,290	5,840	4,450	16,600
Japan	916	866	4,210	1,360	2,140	1,640	5,150
Norway	1,390	928	5,410	1,890	1,570	462	3,920
Poland	20	100	940	388	260	180	828
Singapore	1,170	939	4,030	1,140	398	293	1,830
Slovenia	375	306	1,450	241	800	690	1,730
United Kingdom	1	19	202	58	119	3	180
Other	911	1,110	3,640	848	1,190	887	2,930
Total	27,900	25,900	104,000	32,100	32,300	23,000	87,400
Other titanium dioxide:							
Canada	210	201	989	246 r/	655	207	1,110
France	2,250	2,950	9,780	2,370	1,050	1,420	4,840
Germany	342	225	1,330	260	341	120	720
South Africa	1,390	1,270	5,790	1,900	2,690	1,650	6,240
Spain	4,220	4,660	13,900	4,670	2,740	3,030	10,400
United Kingdom	631	671	3,540	1,130	990	519	2,640
Other	585	894	4,100	787 r/	2,170	518	3,470
Total	9,640	10,900	39,400	11,400	10,600	7,450	29,500

See footnotes at end of table.

TABLE 6--Continued
U.S. IMPORTS FOR CONSUMPTION OF TITANIUM PIGMENTS 1/

(Metric tons)

	1996			1997			
	Third quarter	Fourth quarter	Year to date	First quarter	Second quarter	July- August	Year to date
Titanium oxide:							
Belgium	637	389	2,290	621	760	229	1,610
Canada	--	109	2,930	--	--	3	3
France	888	936	5,230	3,290	2,320	1,100	6,710
Germany	1,890	2,570	8,230	1,280	590	362	2,230
Japan	142	198	1,180	211	136	62	410
United Kingdom	80	541	742	141	400	121	662
Other	789	775	2,900	998	1,210	766	2,980
Total	4,430	5,520	23,500	6,540	5,420	2,640	14,600
Grand total	42,000	30,700	155,000	50,000	48,400	33,100	131,000

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.

TABLE 7
PUBLISHED PRICES OF TITANIUM MATERIALS

(End of period, third quarter 1997)

Specification of material	Range
Ilmenite, per metric ton:	
F.o.b. Australian ports	\$76 -- \$87
Titanium slag, per metric ton: 1/	
80% TiO ₂ , Canada	294
85% TiO ₂ , South Africa	390
Rutile, per metric ton:	
Natural:	
Bagged, f.o.b. Australian ports	640 -- 700
Bulk, f.o.b. Australian ports	490 -- 540
Sponge metal, per pound:	
Estimated, domestic	4.25 -- 4.50
Titanium scrap, per pound:	
Turnings, unprocessed (Ti-6Al-4V)	.66 -- .73
Ferrotitanium, per pound:	
70% (max. 4.5% Al) per pound Ti	1.95 -- 2.05
Titanium dioxide pigment, per pound:	
Anatase, f.o.b. U.S. plants, list price	.90 -- .94
Rutile, f.o.b. U.S. plants, list price	.92 -- .94

1/ Estimated based on U.S. imports for consumption.

Industrial Minerals (London), Platt's Metals Week, and industry contacts.